If you are given two different lines which lie in a two-dimensional plane, you might try to mirror the plane first at one line, then at the second line. Well now there are two possibilities (because the lines are not equal to each other). Either the two mirroring operations have exactly one fixed point or they have no fixed point. Your job is to determine whether mirroring a plane first at one line and then the other line produces one or no fixed points. The result doesn't depend on the order of the mirroring operations.

Input

Each line of input will contain a description of a line. The line will be given in the form $ax + by = c$ whereby a, b, and c will be on the line in that order. a, b and c will be integers and $-100 \leq a, b, c \leq 100$. Two consecutive lines form a testcase. So the first and the second line form the first testcase. The third and the fourth line form the second testcase and so on and so forth. The input will be terminated by two lines containing three zeros each.

Output

For each testcase output whether two consecutive mirroring operations at the lines produce none or one fixed point. If there is no fixed point output that there is no fixed point in the format shown in the sample output. If there is one fixed point output the coordinates in the format shown in the sample output, whereby the first number is the x-coordinate and the second is the y-coordinate. The coordinates should be rounded to two decimals after the decimal point.

Sample Input

```
1 2 1
1 1 1
1 1 3
1 1 4
1 2 3
3 2 1
10 2 3
14 7 5
0 0 0
0 0 0
```

Sample Output

```
The fixed point is at 1.00 0.00.
No fixed point exists.
The fixed point is at -1.00 2.00.
The fixed point is at 0.26 0.19.
```